Planned Activities

- Identify underlying mechanisms responsible for colloid sorption at air-water interfaces.
- Study partitioning at air-water interfaces in more complexed systems containing mixtures of heavy metals, natural organic matter, and organic contaminants.
- Test the feasibility of colloid release and mobilization for in-situ decontamination of sorbed metals and radionuclides.

Conclusions

- We developed a bubble column method for quantifying colloid sorption at gas-liquid interfaces.
- The method was validated through comparing SDBS K values obtained through comparing conventional surface tension measurements with values obtained with the bubble column.
- The partition coefficients of clay and humic acid at air-water interfaces were obtained.
- This method will permit quantification of surface activities of a wide range of inorganic, organic, and microbial colloids, as well as molecular species complexed onto colloids.

Publication

Wan, J. and T. K. Tokunaga, Measuring partition coefficients of colloids at air-water interfaces, Environ. Sci. Technol., in press, 1998.

Acknowledgment

This work was carried out under U.S. Department of Energy Contract DE-AC03-76SF-00098. Funding was provided by the U.S. Department of Energy, the Environmental Management Science Program.